



Additel 949

Hydraulic Ultra-High Pressure Test Pump User's Manual
[Version number:1306V01]



Warnings and cautions

- Operate the pump in the rated pressure range (37,500 psi) , DO NOT over the safety pressure (40,000 psi) .
- When the system pressure is greater than 10,000 psi, you must close the pre-pressurization shut off valve (#7) and then pressurize the system.
- Always tighten the gauges using two wrenches .
- Close all valves and handles of the pump, and tighten the plugs on the connectors during transportation.
- Always keep the reservoir cover vent valve (#4) open during operation.
- Do not over tighten the valves, connectors and handles to avoid any damage.
- Change media immediately if it is contaminated.
- Keep media level between 1/4 and 3/4 of the liquid reservoir filled.
- Keep the threads clean and lubricious, and remove any dirt on threads.
- Used by Trained Personnel only.
- Any security problems or damages caused by incorrect operations are beyond Additel's responsibility.

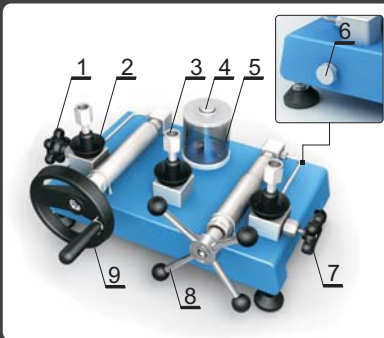
Specification

- **Pressure range:** 12.5 psi (0.85 bar) vacuum to 37,500 psi (2500 bar) positive pressure

*Remark: If local atmosphere pressure is 1 bar, the vacuum can reach to 0.85 bar;
If local atmosphere pressure is P, the vacuum can reach to (P - 85%) bar.*

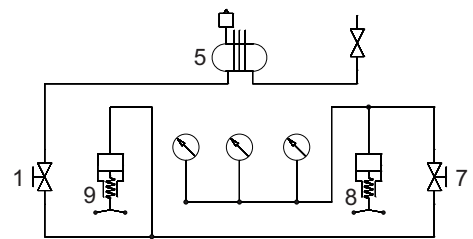
- **Temperature:** (5 ~ 50) °C
- **Adjusting fineness:** 0.015 psi (1 mbar)
- **Safety pressure:** < 40,000 psi
- **Pressure media:** Diethylhexyl Sebacate
- **Size:** Height: 10.43" (265 mm)
Base: 20.71" (526 mm) x 9.65" (245 mm)
- **Weight:** 35.5 lb (16 kg)

Views and Hydraulic Schematic



- 1- Reservoir shut off valve
- 2- Over-flow reservoir
- 3- Positional Autoclave F-250-C, 9/16"-18UNF female (or customized female connector)
- 4- Reservoir cover vent valve
- 5- Reservoir
- 6- Liquid drain valve
- 7- Pre-pressurization shut off valve
- 8- High-pressure Pressurization and fine pressure adjustment handle
- 9- Pre-pressurization handle

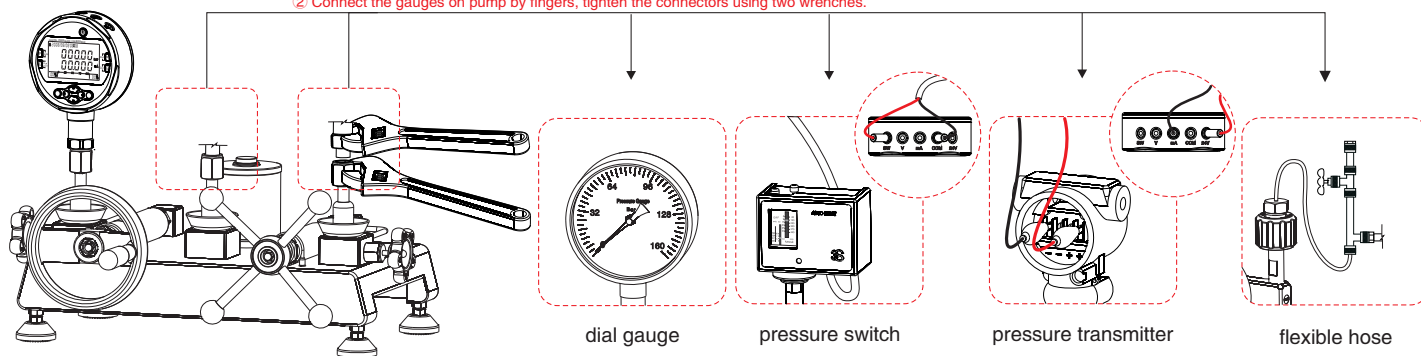
Hydraulic Schematic



Troubleshooting

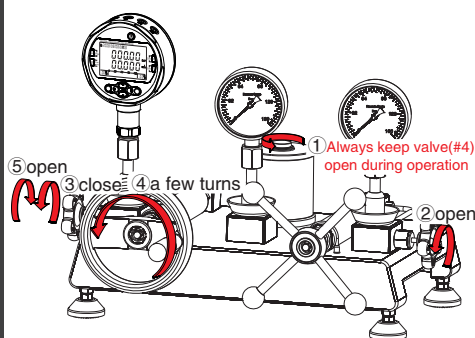
Problems	Causes	Solutions
Hard to pressurize through turning Pre-pressurization handle (#9)	Reservoir shut off valve (#1) is not closed	Close shut off valve (#1)
	Pre-pressurization shut off valve (#7) is closed	Open pre-pressurization shut off valve (#7)
	The media is not enough	Fill more media, and keep media level between 1/4 and 3/4 of the liquid reservoir filled
	Too much air in the pump	Turn the handle anticlockwise to vacuum the pump, open reservoir shut off valve (#1) to have air released
Hard to pressurize through turning high-pressure pressurization handle (#8)	The pre-pressurization shut off valve (#7) is not closed completely	Close pre-pressurization shut off valve (#7)
	Reference gauge or devices under test (DUTs) are not connected tightly	Check connector, replace the PTFE type, re-tight using a wrench
	The connector of DUT is not matched to connector	Use proper adapter
Hard to reach high vacuum	Too much air in the pump	Close pre-pressurization shut off valve (#7), open reservoir shut off valve (#1), turn pre-pressurization handle (#9) clockwise fully, close reservoir shut off valve (#1), and then open pre-pressurization shut off valve (#7)
	#4 valve is not open	Open the #4 valve
Hard to pressurize large-cavity DUT	Large-cavity of DUT, and pressurize the system too slow	Step 1: Turn pre-pressurization handle (#9) clockwise fully, close pre-pressurization shut off valve (#7), open reservoir shut off valve (#1). Step 2: Turn pre-pressurization handle (#9) anticlockwise fully, close reservoir shut off valve (#1). Step 3: Open pre-pressurization shut off valve (#7), pressurize the system. Step 4: Repeat step 1 to 3.
Pressure gauges do not reach to zero	#4 valve is not open	Open the #4 valve
Hard to turn the valves or handles	Too tight in last operation	Do not close shut off valves and handles too tightly
	Hard to turn pre-pressurization handle (#9) at high pressure	It is normal. Please use high-pressure pressurization handle to increase/reduce the pressure.
	Lack of lubrication on threads	Lubricate the threads

Note: ① Gauge positions are exchangeable. If only one device under test (DUT) is connected, the third connector on pump should be closed by a plug provided.
② Connect the gauges on pump by fingers, tighten the connectors using two wrenches.



Degas

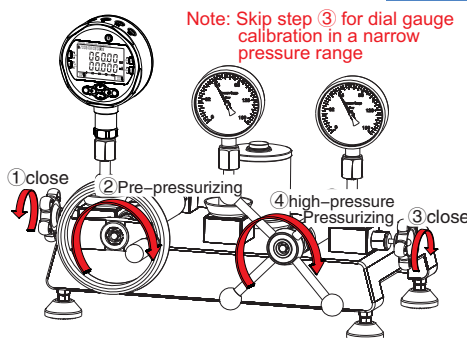
B



Pressurizing procedure

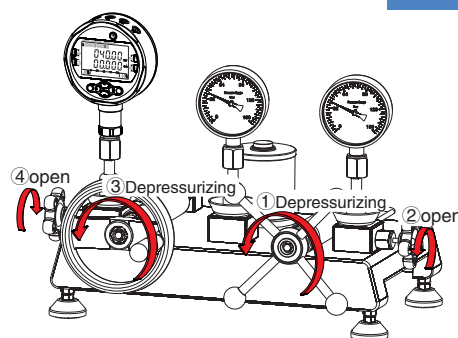
C

Note: Skip step ③ for dial gauge calibration in a narrow pressure range



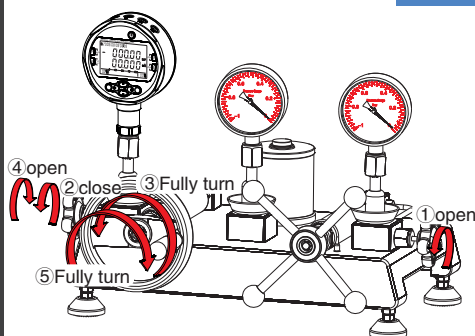
Depressurizing procedure

D



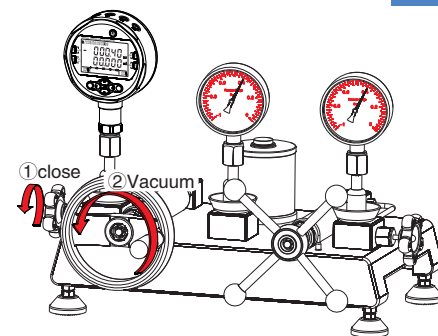
Open to atmosphere (Venting) and Zeroing

E



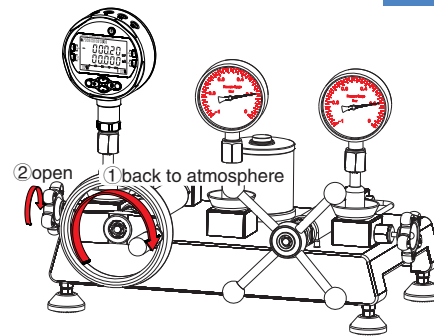
Vacuum procedure

F



Back to atmosphere

G

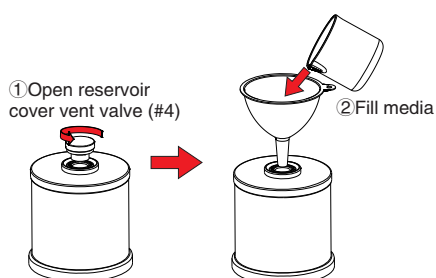


Maintenance

Fill media

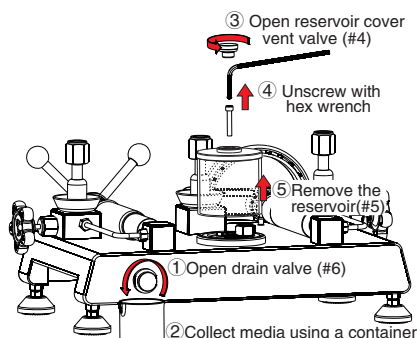
A

Note: Please degas after filling media liquid, in case hard to generate pressure.



Drain and Clean

B



Remark:

A: Additel has made a concerted effort to provide complete and current information for the proper use of the equipment. The product specifications and other information contained this manual are subject to change without notice.

B: Above pictures are just for reference.